

## **Technologies for Improving Population Health and Eliminating Health Disparities (R41/R42)**

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The official link for this solicitation is: <http://grants.nih.gov/grants/guide/rfa-files/RFA-MD-15-008.html>

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Description:  
Purpose

The purpose of this funding opportunity is to stimulate a partnership of ideas and technologies between innovative small business concerns (SBCs) and non-profit research institutions resulting in improving minority health and the reduction of health disparities by commercializing innovative technologies. Healthy People 2020 defines a health disparity as a particular type of health difference in the incidence, prevalence, morbidity, and burden of diseases and other adverse health outcomes that is closely linked with social, economic, and/or environmental disadvantage. NIH-defined health disparity population groups include racial/ethnic minorities (African Americans, American Indians, Alaska Natives, Asian Americans, Hispanic Americans, Native Hawaiians, and other U.S. Pacific Islanders), socioeconomically disadvantaged individuals, and individuals residing in rural areas. Appropriate technologies must be effective, affordable, culturally acceptable, and easily accessible to those who need them. This announcement is expected to reduce health disparities within and across the priority areas of cardiovascular disease, stroke, cancer, diabetes, HIV/AIDS, infant mortality, mental health, and obesity, as well as lung, liver, and kidney diseases, psoriasis, scleroderma, and other diseases, illnesses, and conditions of public health importance.

Background

Over the years, there has been continued improvement of health for all Americans with the

introduction of medical and scientific advances. Despite notable improvements gained as a result of the technological advancement, there continues to be an alarming disproportionate burden of illness among minority and other health disparity populations. Overcoming persistent disparities in healthcare access and health outcomes remains a foremost challenge. To meet this challenge, the NIMHD is committed to supporting a wide range of research, aimed at the development of innovative diagnostics, treatments, and preventative strategies to reduce, and eventually eliminate health disparities.

#### Research Objectives

This initiative is intended to support the development of a product, process or service for commercialization with the aim of reducing disparities in healthcare access and health outcomes. Appropriate technologies should be effective, affordable, culturally acceptable, and deliverable to racial/ethnic minorities, low-income and rural populations.

Technologies to be developed may be new and innovative or they may arise from existing technologies that have been redesigned based on the needs of one or more disparity populations. To be effective, a technology must provide an improvement over current quality of care for a health disparity population by overcoming one or more of the barriers. These include:

- Physical Barriers- factors such as proximity to healthcare facilities and transportation may limit access to healthcare.
- Knowledge Barriers- health literacy and language barriers can inhibit healthcare delivery, as well as a lack of patient information for the healthcare provider.
- Infrastructure Barriers- rural hospitals and community health centers may not have the same resources and expertise of large hospitals, and may not be able to afford advanced medical technologies.
- Economic Barriers- lack of insurance coverage or financial resources may also contribute to disparities in healthcare access.
- Cultural Barriers- religious beliefs and social customs often deter certain populations from seeking healthcare.

#### Specific Areas of Research Interest

The technology should also be affordable to the local hospital, community health center, primary care physician, or individual patient in need. The development of a technology should be amenable to the population's cultural beliefs and social customs. This is critical to the successful delivery of quality healthcare. Technologies that might achieve the objectives of this initiative may be as follows:

- Innovative products or services that facilitate or enhance care coordination between primary care providers, hospital emergency department staff, specialty physicians, nurse practitioners, providers of mental health and behavioral health services, patient navigators, etc., in medically underserved communities and regions.
- Culturally attuned behavioral interventions or low-cost tools and technologies (e.g. software apps for mobile devices) that empower and promote opportunities for individuals and communities to engage in health-seeking behaviors (diet choice, exercise/physical activity, oral hygiene, medication adherence, child immunizations, etc.) and to avoid risky behaviors (smoking, alcohol/drug misuse, unsafe sex, etc.).
- Tools, technologies, and methods for detecting, measuring, and assessing a broad array of unhealthy social and environmental exposures (stress, pollutants, allergens, noise, crime, etc.), and for characterizing cumulative exposures to these environments (exposomes) for individuals and communities and linking this information to physiological responses and health indicators at the individual and population levels. These technologies may include efforts to improve data collection and data integration across disparate data sources, including clinical patient data, public health data, census data, housing data, employment

data, crime statistics, etc.

- Products or services that expand opportunities to access and utilize high-quality prenatal care and thereby reduce the frequency of high-risk pregnancies in health disparity populations.
- Products or services that engage, empower, and motivate individuals and communities to enhance the quality of life and reduce health disparities among people with disabilities.
- Culturally appropriate survey instruments, tools, modules and databases to promote community-based research engaging racial/ethnic minorities, rural and other medically underserved communities.
- Culturally appropriate, evidence-based health empowering promotion and disease prevention educational media such as software, informational videos, printed materials for health disparities populations and disadvantaged communities.
- Innovative software, tools and technology for Science and Health Education such as curriculum materials, interactive teaching aids, models for classroom instruction for K-12 and undergraduate students and the general public.
- Mobile health (mHealth) and telehealth/telemedicine technologies and apps for communication, diagnosis, monitoring, evaluation, medical management, tracking and treatment in underserved community settings and rural and remote locations.